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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,259	03/22/2004	Shizhong Zhao	20030813-001A	1937
34160	7590	07/11/2007		
SUD-CHEMIE INC. 1600 WEST HILL STREET LOUISVILLE, KY 40210			EXAMINER NGUYEN, CAM N	
			ART UNIT 1754	PAPER NUMBER
			MAIL DATE 07/11/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/806,259

**Applicant(s)**

ZHAO ET AL.

**Examiner**

Cam N. Nguyen

**Art Unit**

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 4/30/07 (an amendment/response).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Response to Amendment

1. The amendment and remarks, filed on April 30, 2007, has been made of record and entered. Claims 6-12 & 16-18 have been amended. Claims 19-20 have previously been canceled.

Claims 1-18 are currently pending in the application and being considered.

### Claim Rejections - 35 USC § 102(b)

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Shoji et al., “hereinafter referred to as Shoji”, (US Pat. 5,773,589).

Shoji discloses a catalyst for steam-reforming of lower hydrocarbons, comprising a support comprising  $\text{Al}_2\text{O}_3$  and 0.5 to 25 percent by weight, per the catalyst, of CaO, at least part of CaO forming a compound(s) with  $\text{Al}_2\text{O}_3$ , and Ni as the active component (see col. 6, claim 1). The catalyst comprises 3 to 20 percent by weight of nickel (see col. 6, claim 2). The catalyst pore volume of 0.2 ml/g or larger is disclosed at col. 3, ln 4-5. Furthermore, the catalysts may contain, as impurities or additives, such as alkali metals, Group IIIA elements, and other elements such as lanthanum, silicon, titanium, and zirconium (see col. 4, ln 52-57). In Example

1 of the reference, Shoji specifically teaches a catalyst comprising a support and 7.6 wt% of nickel based on the whole catalyst was produced. The support was constituted of CaO and alpha-Al<sub>2</sub>O<sub>3</sub>, with the content of CaO being 6 wt% based on the whole catalyst, and contained no free CaO detectable by X-ray diffractometry. All of the CaO in the support was present as calcium aluminate compounds.

Regarding the intended use limitation on “for use in a feed streams containing steam, CO<sub>2</sub>, and CO at levels such that ... of sulfur compounds” in the preamble, it is noted that this is merely a recitation of the intended use of the claimed catalyst composition, and that the claimed catalyst composition does not depend on the preamble recitation for completeness, but instead the limitations of the catalyst composition are able to stand alone; see MPEP. 2111.02 and 2114.

Regarding claims 1, 11-12, & 15, while Shoji is silent with respect to the specific amount of the impurities or additives which may be contained in the disclosed catalyst, it is inherent that the disclosed impurities or additives amounts of the metal(s) contained in the disclosed catalyst would be at least the minimal amount of 0.01 wt% that applicants claiming. This would appear meets the claimed limitation of “from about 0.1 wt% to about 20 wt% of titanium”.

Regarding claims 1, 4- 5, & 12-14, the claimed calcium and nickel amounts are met by the teaching of the reference ((see Shoji at col. 6, claims 1 & 2).

Regarding claims 6-9 & 16-17, it is considered the claimed catalyst surface area and nickel surface area are inherently met by the teaching of the reference in view of the same catalyst and the same metal amounts disclosed. Also, in view of the teaching at col. 2, ln 36-45 of reference, there is a teaching that for increasing the specific surface area of the active component, a support having an increased specific BET surface area should be used, etc.

Regarding claims 10 & 18, the claimed catalyst pore volume is met by the reference (see Shojio at col. 3, ln 4-5).

There is no patentable distinction seen between the disclosed catalyst and that disclosed by Shoji. Thus, the claims are anticipated by the teaching of the reference.

**Response to Applicants' Arguments**

4. Applicants' response, filed on 4/30/07, to the office action dated 02/05/07 has been fully considered, but not deemed persuasive for the following reasons.

Applicants' urgings over the Shojio reference for not teaching the claimed "titanium concentration" and "nickel surface area" have been noted. The arguments are not found persuasive because: (1) both the instant claims and the reference disclose the same catalytic components and same metal concentrations for aluminum, calcium, and nickel. Thus, it is only reasonable to conclude that the disclosed catalyst would inherently possess the same nickel surface area and would contain some amounts of impurities, such as titanium, which is taught to be one of the possible impurities may be contained in the catalyst in the reference (as indicated in the rejection above). Note that the instant claims 1, 11, 12, & 15 contain the phrase "about" in the limitation "about 0.01 wt%" and "about 0.1 wt%" as the lower range for titanium, which can be "0" amount and which is not required. (2) the instant claims are drawn to a catalyst, which is a product and not a process of making the catalyst. Thus, the argument of the differences between the process of making the catalyst of the instant claims and the disclosed catalyst is not deemed persuasive. Furthermore, since the instant claims are drawn to a product, it is the

catalytic structure and properties of the catalyst must be compared including experimentation data showing such differences, otherwise.

The claimed catalyst does not appear patentably distinguish from the disclosed catalyst, the rejection is therefore maintained.

**5. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

**Conclusion**

**6.** Claims 1-18 are pending. Claims 1-18 are rejected. No claims are allowed.

**Contacts**

**7.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cam N Nguyen, whose telephone number is

571-272-1357. The examiner can normally be reached on M-F, 9:00 AM - 6:30 PM, at alternative work site.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Cam N. Nguyen/

Nguyen/cnn

Primary Examiner

July 08, 2007

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